P2JW08100F-9-B00100-1----XA
********CMYK Composite
03/21/2008 AZ,CX,EE,FL,MW,NE,NY,SA,SC,SW,WE

MARKETPLACE

© Copyright 2008 Dow Jones & Company, All Rights Reserved

Bloomberg News/Landov

Pepsi Is Juicing Up Its Game in Russia
MEDIA & MARKETING **B4**

New Balance Plans A Different Stride
ADVERTISING **B3**

Amid security concerns, Bain Capital ends its China-backed 3Com deal — TECHNOLOGY **B6**

EBay restructures as part of its next CEO's plan to fix up the auction site — TECHNOLOGY **B6**

SCIENCE JOURNAL

Tiny Gene Variations Can Even Alter Effect Of the Pills We Take

MODERN GENETICS produced a paradox: The more we learn how much DNA we share, the more we are intrigued by the minor biochemical variations that set us each apart—and with good reason.

Tiny differences in genes we have in common make some of us more vulnerable to breast cancer, alcoholism or infections, researchers recently reported. Other variations in genes we share make some of us more resistant to chemotherapy or treatments for heart disease and hypertension.

Any one of 11 variations in a single gene, for another example, can make it harder for commonly prescribed antidepressants to temper our moods, researchers at Munich's Max Planck Institute of Psychiatry reported in January in Neuron. Any one of nine variations in another gene may double the risk of lupus, University of Alabama scientists said.

By Robert Lee Hotz

Many of these fractional hereditary distinctions are random effects of chance at play. (Any two people are more than 99% the same at the genetic level.) Broadly speaking, they also arise from the ancient history recorded in the genetic autobiography that we carry in our cells, coded there in billions of characters of DNA. The human genome is a biomedical narrative of migration, disease, conquest and trade. It has been accumulating plot twists and changes since small clans first moved out of East Africa to settle the world tens of thousands of years ago.

In the most detailed look yet at global human variation, two independent research teams—one led by scientists at Stanford University and the other by scientists at the University of Michigan—recently analyzed more than half a million genetic markers across hundreds of people from 51 ethnic groups on five continents. Melding medical genetics and population genomics, they probed kinship, diversity and the underpinnings of disease. "We are tying together what we know about human history with what we see in the human genome," said University of Utah anthropologist Henry Harpending.

NEW RESEARCH IN that effort reveals, for example, that Americans of European descent carry more potentially harmful genetic variations than do African-Americans, Cornell University computational biologist Carlos Bustamante and his colleagues reported last month in Nature.

The researchers concluded that this pattern of variation was the legacy of humanity's first forays into prehistoric Europe, when the venturesome probably numbered a few thousand or less. The hereditary flaws carried by these forebears then became widespread as their descendants expanded into a population of millions.

Dr. Bustamante compared 10,000 genes shared by 15 African-Americans and 20 European-Americans and found nearly 40,000 individual differences in which a gene's smallest structural unit—a single DNA base pair—had been altered. Half of them had no measurable effect. Everyone harbors some potentially harmful variations, but, overall, the European-Americans had a higher percentage of those that could be deleterious.

"You cannot say anything at the individual level on the basis of this data," Dr. Bustamante cautioned. "No one person's genome is any healthier or better or more fit in an evolutionary sense than any other individual's."

Hundreds of genes also behave slightly differently in families of European descent than they do in families of African ancestry, especially those genes involved in producing antibodies and other fundamental cell functions, University of Chicago medical researchers reported this month in the American Journal of Human Genetics.

The Chicago scientists analyzed gene variations to learn why some people are more sensitive than others to the toxic side effects of chemotherapy. They compared 9,156 genes in 30 Caucasian families in Utah with those in 30 Yoruban families from Ibadan, Nigeria.

ALL TOLD, THEY found that 156 shared genes were more active among those of European heritage, while 254 other shared genes were more active among those of African ancestry. No one knows yet what, if anything, the minor variations in levels of gene activity mean medically or if they affect chemotherapy, said Chicago pharmaco-genomics expert Eileen Dolan.

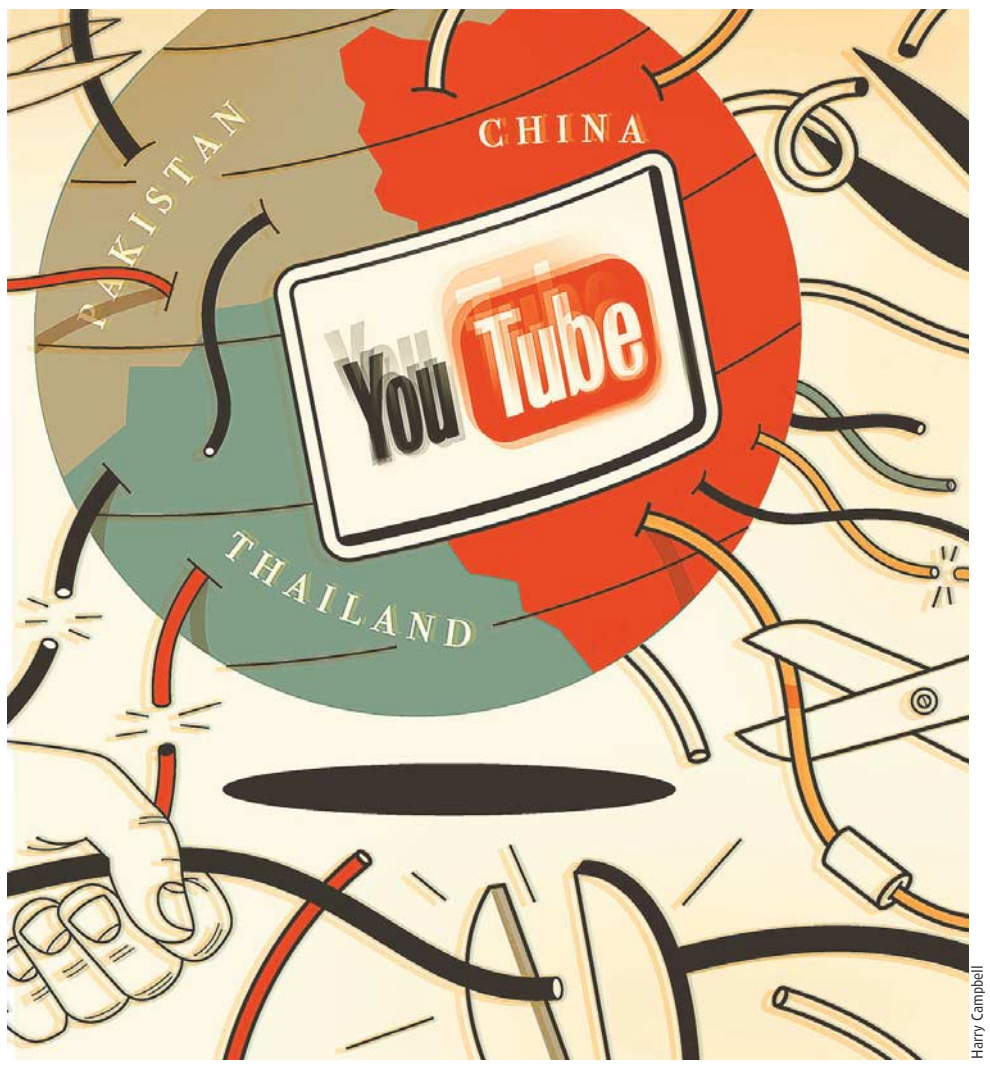
In each instance, "we are comparing the same exact gene in both populations," she said. "The differences are subtle, not dramatic."

To delve even more deeply into human variation, scientists in the U.S., England and China in January launched a $50 million effort to catalog in exhaustive detail the DNA of at least a thousand people from around the world. They expect the 1000 Genomes Project, as they call it, to produce 60 times as much genetic sequence data in three years than has been released in all of the last quarter century.

Researchers hope it may help them tailor more effective medical treatments.

Human variation, however, may be more than medicine can easily master. Researchers at Brigham and Women's Hospital in Boston reported last month in the Proceedings of the National Academy of Sciences that even crucial genetic mutations in cancer cells, for example, may be different in every patient.

Email me at sciencejournal@wsj.com. To discuss today's column, go to the Science Journal forum at WSJ.com.



Harry Campbell

YouTube Unplugged

As Foreign Governments Block Sensitive Content, Video Site Must Pick Between Bending to Censorship, Doing Business

BY JANE SPENCER AND KEVIN J. DELANEY

ON SUNDAY, access to **Google** Inc.'s YouTube inside China was cut off after the Web site was flooded with graphic images from Tibet, including videos of burning trucks and monks being dragged through the streets by Chinese soldiers.

Blocking Western Web sites is routine in China, where the government has tightly controlled the flow of information. But the new YouTube blackout is the latest in a string of clashes between the site and foreign governments in Asia and the Middle East that's forcing the company to grapple with the consequences of its increasingly global reach.

Google Chief Executive Eric Schmidt raised the issue in a meeting in Beijing with Cai Mingzhao, vice minister of the State Council Information Office, on Monday, the company said. The Council denied any knowledge of the blockage and promised to investigate, according to Google. On Thursday, YouTube remained inaccessible from China except to users who took extra technical steps to circumvent the ban.

Last Friday, a Turkish court banned YouTube over a clip deemed disrespectful to Mustafa Kemal Ataturk, Turkey's founder. In February, Pakistan briefly banned YouTube because of an anti-Islam video clip posted on the site that the government said was so inflammatory it could spark riots. In the fall, Thailand blocked YouTube after the site refused to remove a video considered insulting to the nation's king. (The clip showed a pair of women's feet—considered the most offensive part of the body—above the king's head.) And citizens in a number of other countries, including Syria, United Arab Emirates and Morocco, have reported YouTube outages after sensitive content was posted.

The clashes have implications for YouTube's growth abroad, potentially forcing the company to choose between bending to censorship and losing business opportunities.

"This is a situation that the company and all Internet companies will be facing in many countries with all types of political systems as the

Please turn to the next page

At Borders Group, The Next Best Seller Might Be Itself

BY JEFFREY A. TRACHTENBERG AND KAREN RICHARDSON

YOU DON'T have to read between the lines to see that the nation's second-largest book retailer is in financial trouble.

In a sign of how difficult the book market has become for traditional book chains, **Borders Group** Inc. put itself up for sale. It also revealed that worries about a possible cash crunch had prompted it to borrow money from its biggest shareholder, **Pershing Square Capital Management** LP, headed by activist investor William Ackman.

George Jones

Borders shares fell $2.03, or 29%, to $5.07 on Thursday in 4 p.m. composite trading on the New York Stock Exchange, as the company noted that the troubled credit markets had closed off usual avenues of financing. Borders also said it was suspending its dividend. The company has hired J.P. Morgan Securities Inc. and **Merrill Lynch** & Co. to help it review strategic alternatives. "We could sell parts of the business, or we could sell the entire business," said Borders Chief Executive George Jones.

Barnes & Noble Inc., the nation's largest book seller, emerged as a contender for its rival. The company's chairman, Leonard Riggio, in an inter-

Please turn to the next page

AT&T, Verizon In Airwaves Grab; A Win for Google?

BY AMOL SHARMA AND AMY SCHATZ

THE NATION'S LARGEST wireless carriers, **AT&T** Inc. and Verizon Wireless, dominated the bidding at the government's recent auction of radio spectrum, putting them in a commanding position to roll out advanced wireless Internet services to consumers in coming years.

The two cellphone giants accounted for 80% of the nearly $20 billion the Federal Communications Commission said it hauled in through the auction, which began in late January and wrapped up this week. AT&T Inc. agreed to pay $6.6 billion for 227 spectrum licenses in markets covering much of the country. Verizon Wireless, a joint venture of **Verizon Communications** Inc. and **Vodafone Group** PLC, won 109 licenses for $9.4 billion.

For its part, **Google** Inc. didn't acquire any licences, but still may be among the biggest winners through an open-access provision that will allow customers to use whatever phones or software they wish on a portion of the spectrum.

Regulators and technology companies were hoping a major new entrant would emerge from

Please turn to the back page

Will 'Bright Green' Bring Discovery the Long Green?

BY SAM SCHECHNER

COMEDIAN ANNABELLE Gurwitch is trying to show a bunch of fraternity brothers the virtues of saving water. So, while a TV camera rolls, she strips down to gym shorts and bra, and jumps into a low-flow shower with one of them.

Ms. Gurwitch's conservation-minded show is part of a two-year, $100 million push by Discovery Communications LLC to launch an around-the-clock TV network called Planet Green. If successful, its "eco-lifestyle" brand could prove lucrative, attracting advertiser-friendly viewers who are willing to pay extra for hybrid cars and organic food. But Discovery must avoid being snared in a potential green-marketing backlash—or, worse, found guilty of making boring TV shows.

With Planet Green's launch set for June 4, when it will replace the Discovery Home channel in more than 50 million households, executives are busy preparing a programming slate aimed at a mainstream audience they refer to internally as "bright green." Celebrity chef Emeril Lagasse will host "Emeril Green," a cooking program set inside a 65,000-square-foot **Whole Foods Market** Inc. store in Fairfax, Va. Other celebrities are likely to appear in short-form series—many likely to appear on online—depicting their efforts to live a greener lifestyle. A docu-soap, executive produced in part by Leonardo DiCaprio, will chronicle a Kansas town that was leveled by a tornado, only to rebuild using eco-friendly techniques.

"It's not going to be preachy," says David Zaslav, Discovery's chief executive. "It's not a parade of horribles. If it works, I think it'll have an optimistic voice."

Discovery's big investment

Please turn to the next page

Discovery Channel

Annabelle Gurwitch and Holter Graham, front, star in Planet Green's '**Wasted**.'

We built it to be the very best.
Years later, it's certified to stay that way.

Built by a company famous for its engineering heritage, every Certified Pre-Owned Mercedes-Benz has endured a rigorous 155-point inspection* and comes with a one-year limited warranty up to 100,000 total vehicle miles** and roadside assistance for the life of the vehicle. Test-drive one at your authorized dealer today and have a certified Mercedes-Benz driving experience at a certifiably great price. **MBUSA.com**

Certified Pre-Owned by Mercedes-Benz

Mercedes-Benz

2006 E 500 shown in Black paint. See your authorized Mercedes-Benz dealer for details. *Abbreviated inspection applicable to vehicles less than 15 months old with less than 18,000 miles. **See dealer for complete details on warranty and roadside assistance. ©2008 Mercedes-Benz USA, LLC
For more information, call 1-800-FOR-MERCEDES, or visit MBUSA.com.

5540431 P2JW08100F-9-B00100-1----XA
Composite BLACK/WA